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August 06, 2004

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APPLICATION NUMBER: 60/519,113
FILING DATE: *November 12, 2003*

Certified by



Jon W Dudas

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and Acting Director of the U.S.
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PTO/SB/16 (5-03)

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

031088 U.S. PTO
60/519113

111203

INVENTOR(S)					
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<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max)					
A METHOD AND APPARATUS FOR PROVIDING A RICH GRAPHICS COMPOSITING FRAMEWORK FOR INTERACTIVE GRAPHICS WHICH ARE OVERLAID WITH VIDEO CONTENT					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
<input checked="" type="checkbox"/> Customer Number		21611		Place Customer Number Bar Code Label here	
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<input type="checkbox"/> Firm or Individual Name					
Address		Snell & Wilmer LLP			
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ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification Number of Pages		16		<input type="checkbox"/> CD(s), Number	
<input type="checkbox"/> Drawing(s) Number of Sheets				<input type="checkbox"/> Other (specify)	
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76					
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees				FILING FEE AMOUNT (\$)	
<input checked="" type="checkbox"/> The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number		19-2814		\$160.00	
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,

SIGNATURE

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TELEPHONE

949-253-4920

Date

11-12-03

REGISTRATION NO.

25,124

(if appropriate)

Docket Number:

17366-1750

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Provisional Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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P19LARGE/REV05

**A METHOD AND APPARATUS FOR PROVIDING
A RICH GRAPHICS COMPOSITING FRAMEWORK
FOR INTERACTIVE GRAPHICS
WHICH CAN BE OVERLAID WITH VIDEO CONTENT**

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention is directed to improvements in the BD-ROM high-definition movie mode (HDMV) interactive graphics format to enable supplemental graphics to be provided by a content provider to support background images, animation effects for menu introduction and menu removal, and a wider range of colors to support per page palettes.

Description of Related Art

A digital video broadcast standard (DVB-SUB) has been used as a consumer movie distribution format, and recently there has been development of a BD-ROM format with a Blu-ray Disk Founders (BDF) defining syntax and semantics of data streams and associated decoding models for presentation of graphics and interactive graphics. Development of the shorter wavelength lasers such as a blue laser diode have increased the storage capacity of recording mediums such as a BD-ROM disk.

There is a desire in this art to provide improved editorial features to take advantage of this increased storage capacity without interfering with the audio-video playback of stored data such as a movie.

SUMMARY OF THE INVENTION

The innovations in our present invention are designed to extend the BD-ROM High-Definition Movie Mode (HDMV) Interactive Graphics format that is used in the BD-ROM standards, and more particularly, to provide a method and apparatus of extending this format

support Pop-up menus and Multi-Page menus without causing interruption to the audio-video playback. Traditionally, background images have been supplied by the video playback, and the present invention permits Pop-up menus and Multi-Page menus to be supported directly to represent the background images so that the video playback need no longer supply the menu backgrounds. This permits editorial content to be easily facilitated with Pop-up menus and multi-page menus.

Additionally, the present invention provides a per page palette to support a wider range of colors that can be used in each menu page again while supporting multiple menu pages and Pop-up menus that do not interrupt the audio-video playback. Traditionally, the video playback has been necessary to support any animation effects that would be desired. The present invention provides the feature of permitting the Pop-up menus and Multi-Page menus to be supported directly so that animation effects can be advantageously inserted without disturbing or requiring support from the video playback. Thus, the present invention provides several methods to extend with relatively low impact, the BD-ROM HDMV interactive graphics format and decoder model to permit a richer graphics compositing framework. Accordingly, the present invention permits a direct support of background images for menus and various examples of the manner in which the interactive graphics format can be extended or supported in the following documentation. Additionally, the present extends the graphics framework of the interactive graphics format to support per page palettes which is particularly useful when the format represents menu hierarchy and multi-pages directly. Examples are provided in which the interactive graphics format can be extended to support this per page palettes to increase the range of color that will be available.

The present invention further supports animation effects such as, for example, whites and fades for menu introduction and menu removal. Again, examples are provided to disclose an animation effect for the introduction and removal of menu graphics. Accordingly, the richer graphics compositing framework provided by this invention can be used by content providers to more clearly differentiate DVD-video titles and the new BD-ROM titles.

BRIEF DESCRIPTION OF PREFERRED EMBODIMENT

Please refer to the attached documents for a more detailed description of the present invention.

Panasonic Hollywood Laboratory

Proposal:

**Extensions to BD-ROM Hi-Def Movie Mode
Interactive Graphics to provide a richer
graphics compositing framework**

11/11/03

Panasonic id as for lif

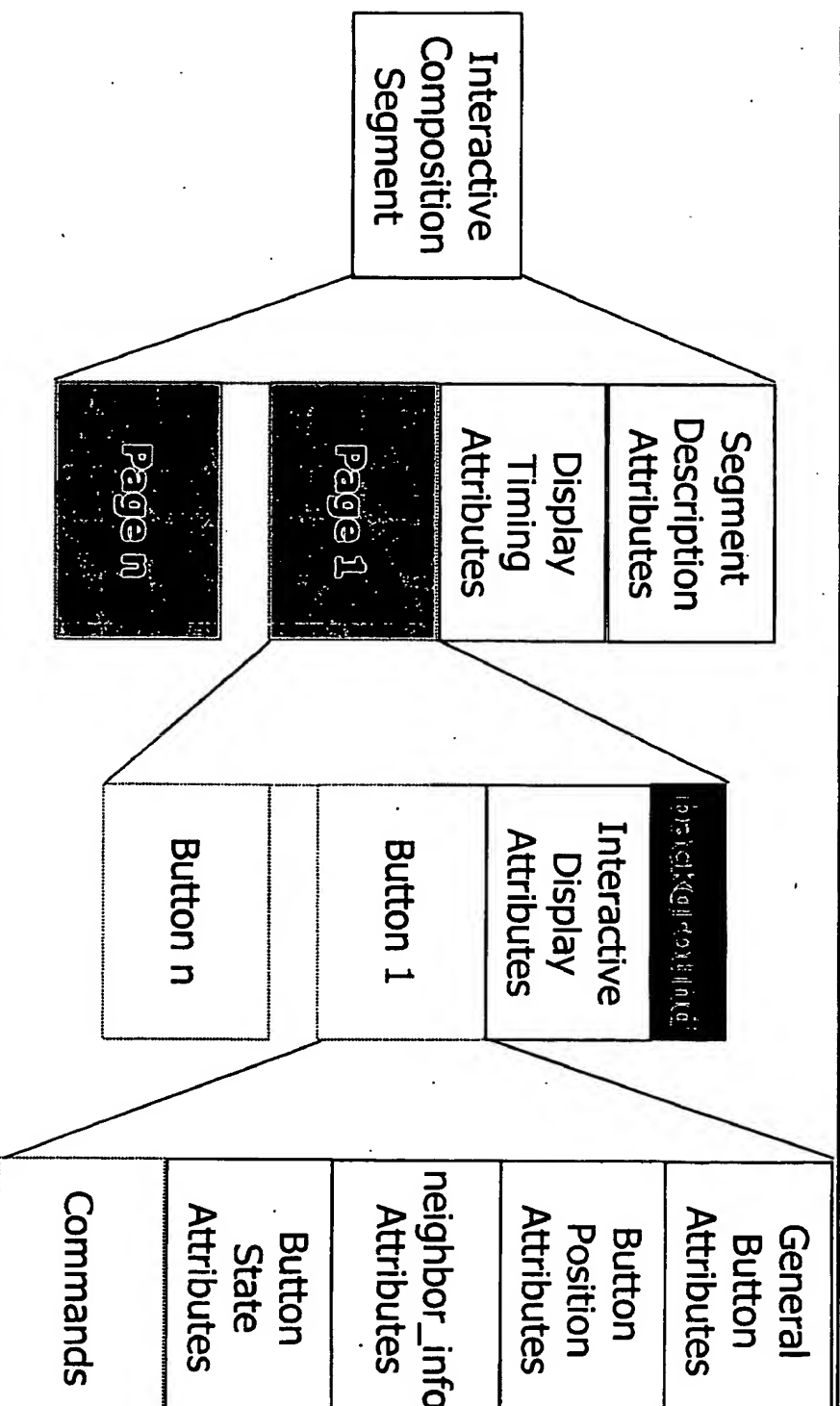
Basic Proposal

**□ Expand upon the structure and framework of BD-ROM
HDMV Interactive Graphics streams to provide a richer
graphics compositing environment whilst minimizing the
cost of decoder implementation.**

1. Support Menu background still image – Buttons are “painted” over Menu background. This is useful when pop-up menus and multi-page menus (without interruption to AV playback) are supported as the content provider cannot utilize the video plane to provide a background for the menus.
2. Per-page Palette (to be used when supporting multiple menu pages and pop-up menus that do not interrupt AV playback) – provide wider range of colors to be used in each menu page.
3. Support animation effects for introducing and removing menu e.g. fades or wipes

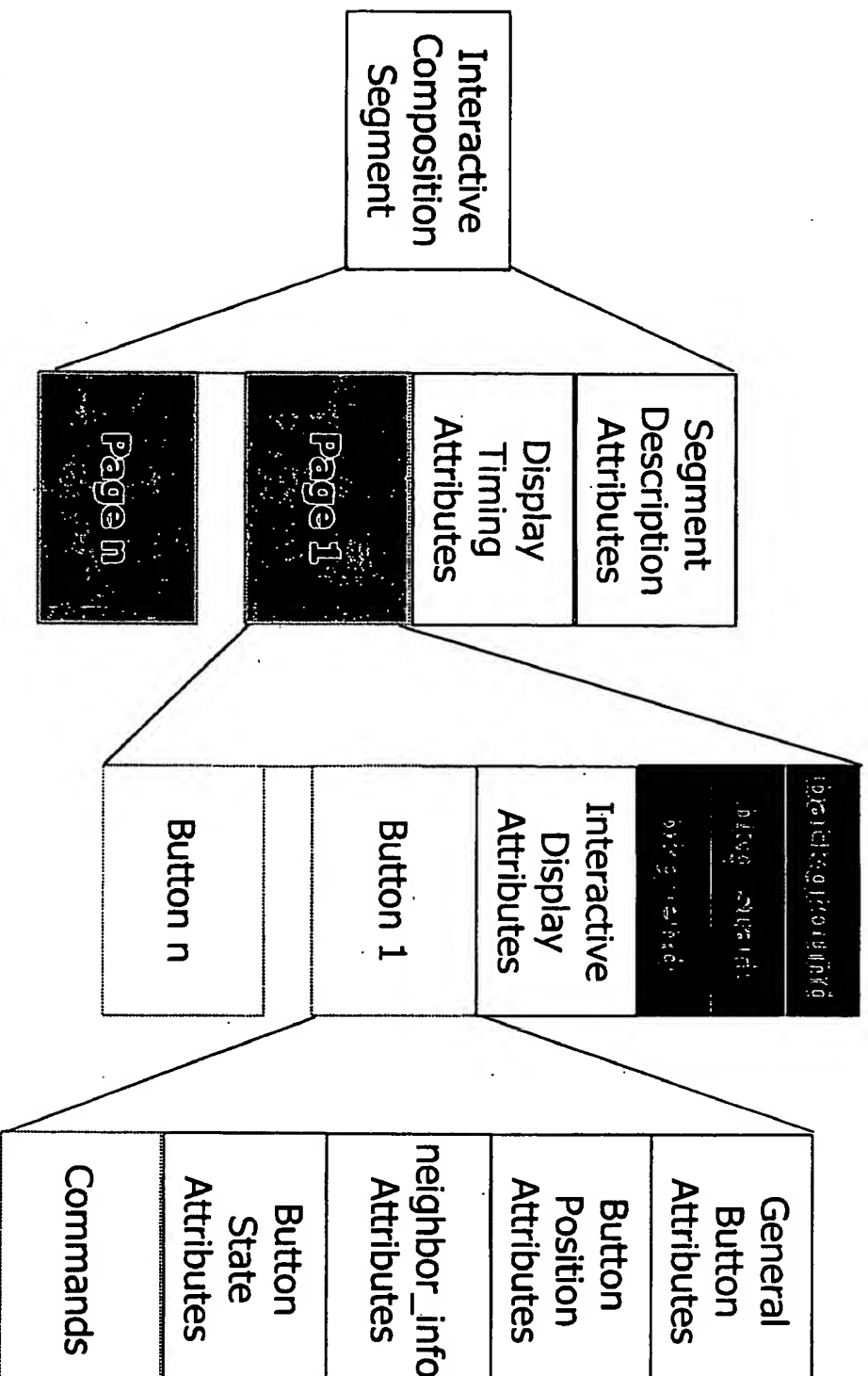
Menu Background: Example 1

- ❑ Using proposal to extend framework for multiple-page support, add additional fields (position, object-id reference) to support a static Menu Background



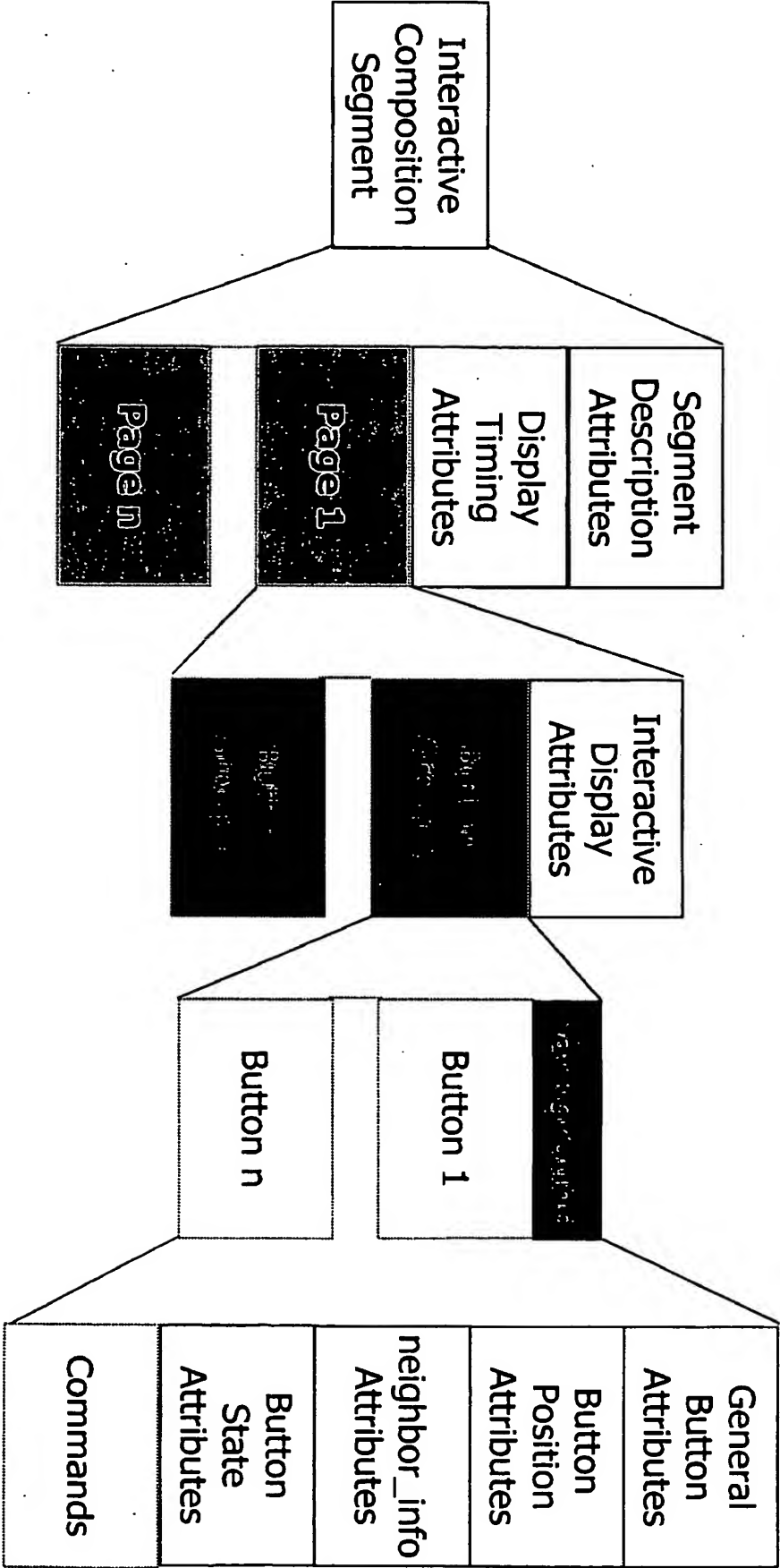
Menu Background: Example 2

- ☐ Using proposal to extend framework for multiple-page support, add additional fields to support an animated Menu Background.



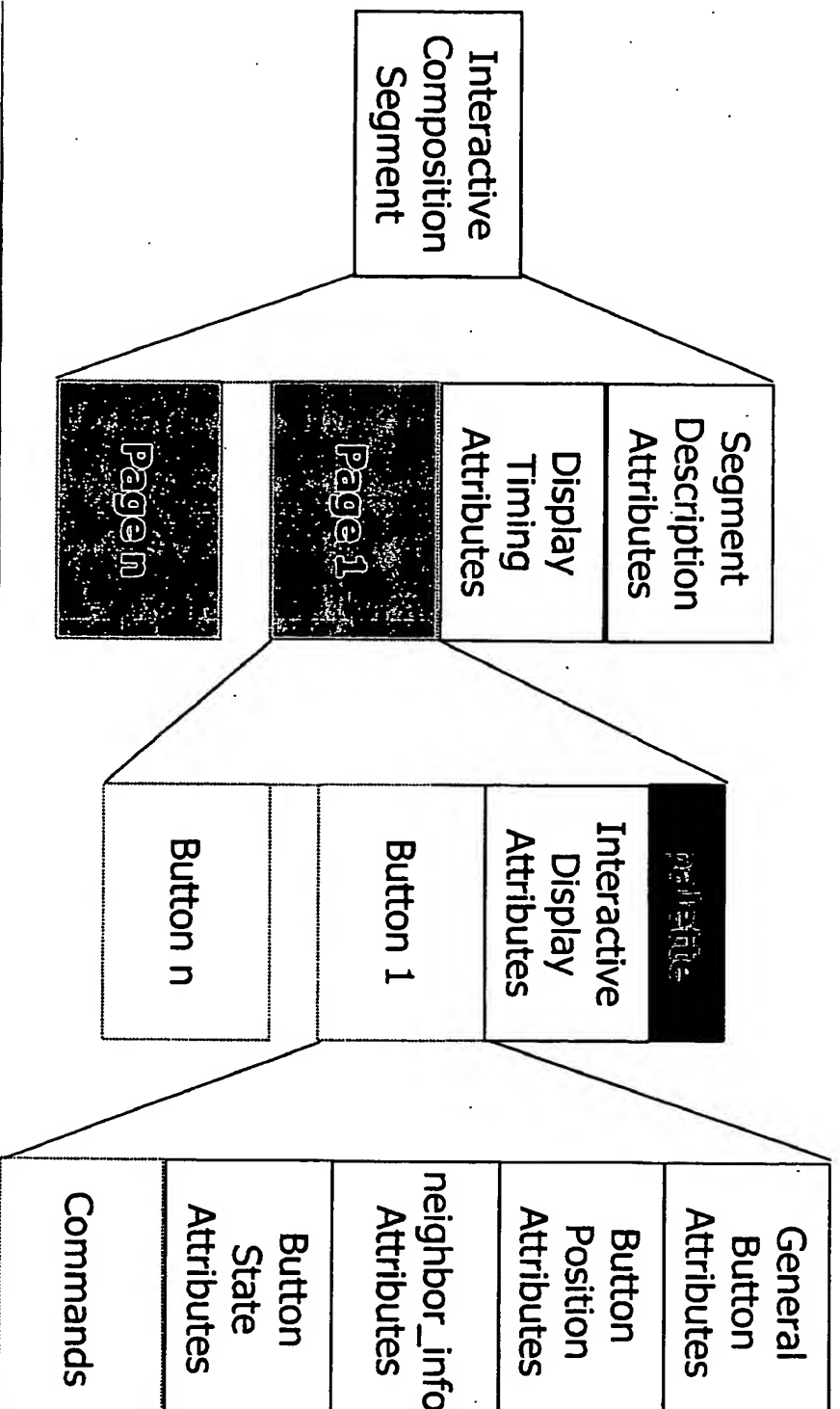
Menu Background: Example 3

- ☐ Using proposal to extend framework for multiple-page support, group Buttons together and provide fields (position, object-id reference) to support a Button Group Menu Background



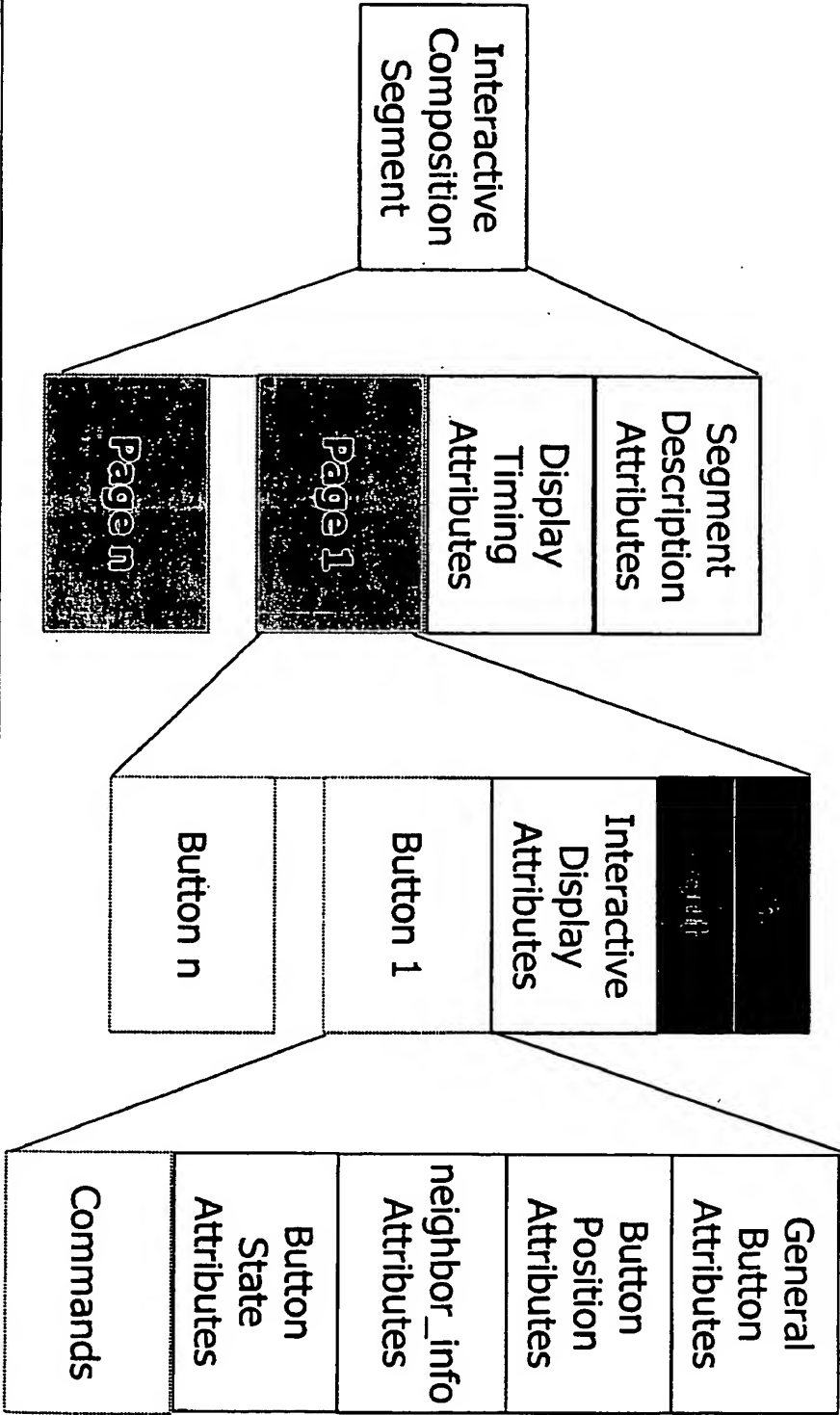
Per-page Palette: Example

- ☐ Using proposal to extend framework for multiple-page support, add a field for Palette reference.



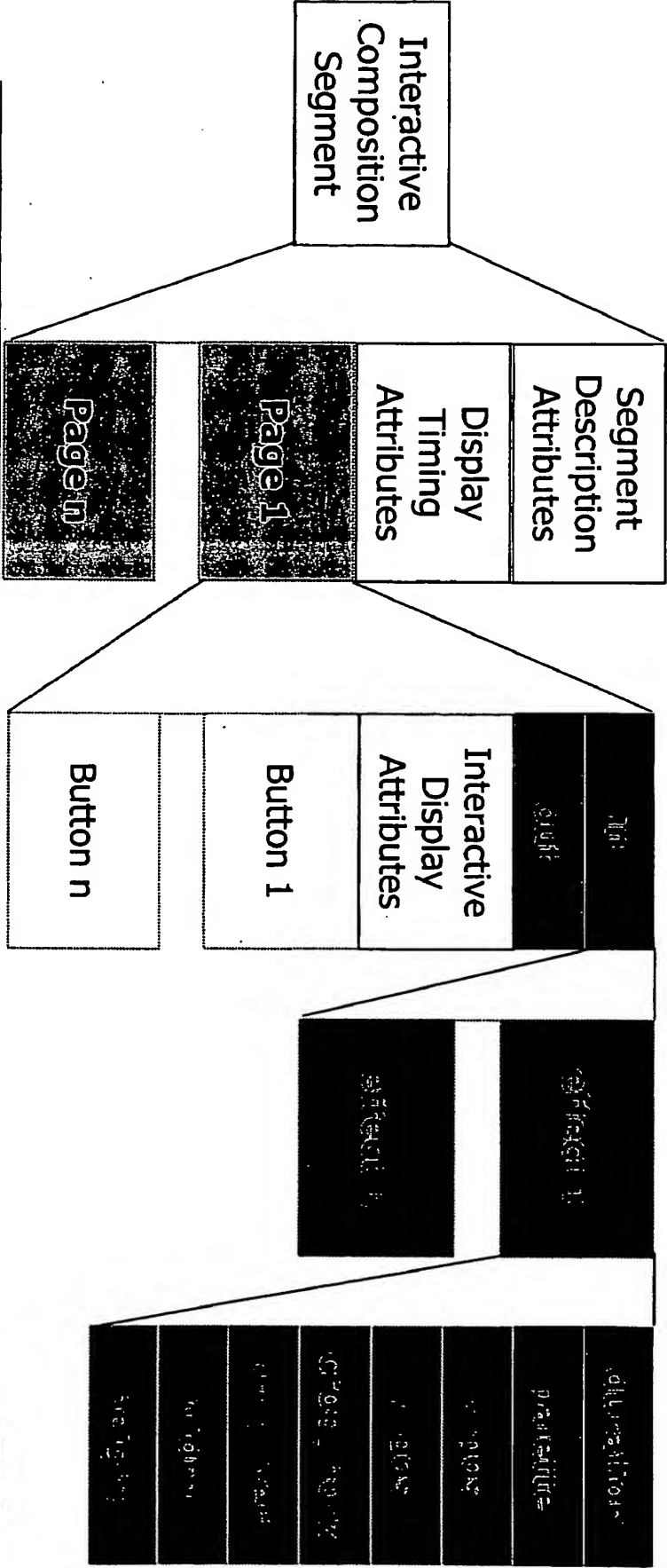
Animation Effects: Example 1

- ❑ Using proposal to extend framework for multiple-page support, add additional fields to support an animated intro and an animated removal of Menu Pages.



Animation Effects: Example 1

- ☐ The intro and removal sections of the ICS have the same structure: they consist of an effect sequence.
- ☐ Use an animation effect framework that is similar to the framework provided in Presentation graphics.



Animation Effects: Example 1

Effect Name
Reference to Palette
Horizontal Position
Vertical Position
Duration of Effect
Width of cropping rectangle
Height of cropping rectangle
Horizontal Position of cropping rectangle
Vertical Position of cropping rectangle

Duration of Effect in System Clock cycles

Reference to Palette for this effect (provides framework for fades)

Horizontal Position to start compositing on the Graphics Plane

Vertical Position to start compositing on the Graphics Plane

Horizontal Position of cropping rectangle in actual Menu image

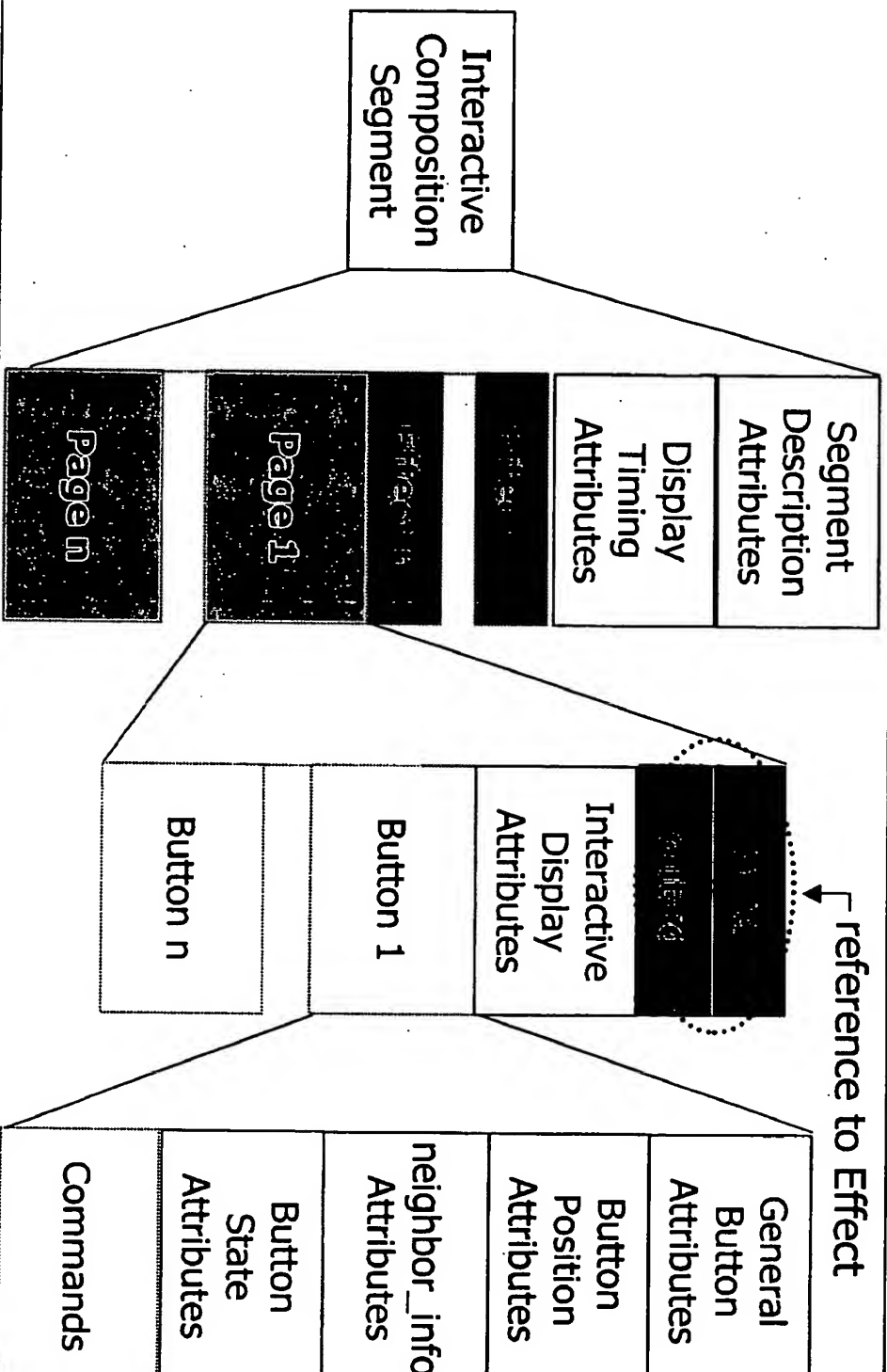
Vertical Position of cropping rectangle in actual Menu image

Width of cropping rectangle in actual Menu image

Height of cropping rectangle in actual Menu image

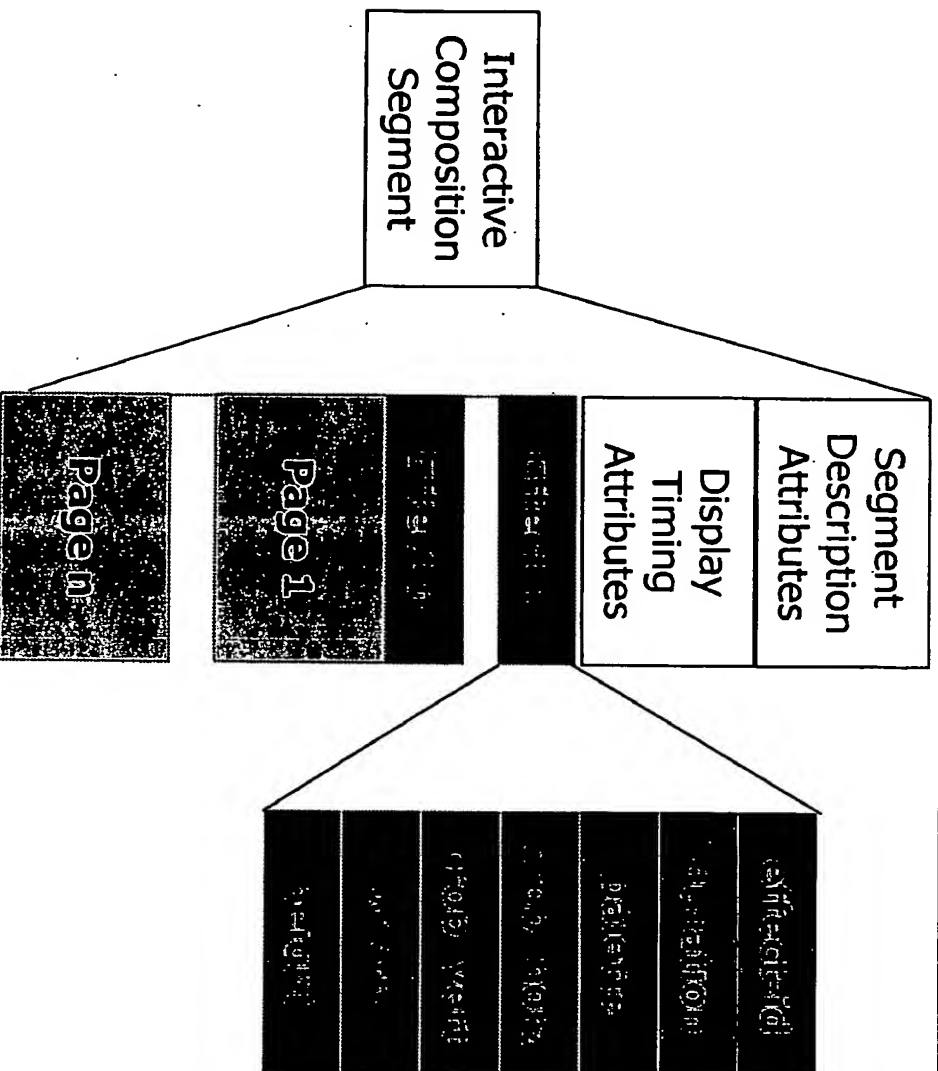
Animation Effects: Example 2

- ❑ Several animation effects may be identical. Support reuse of animation effects.



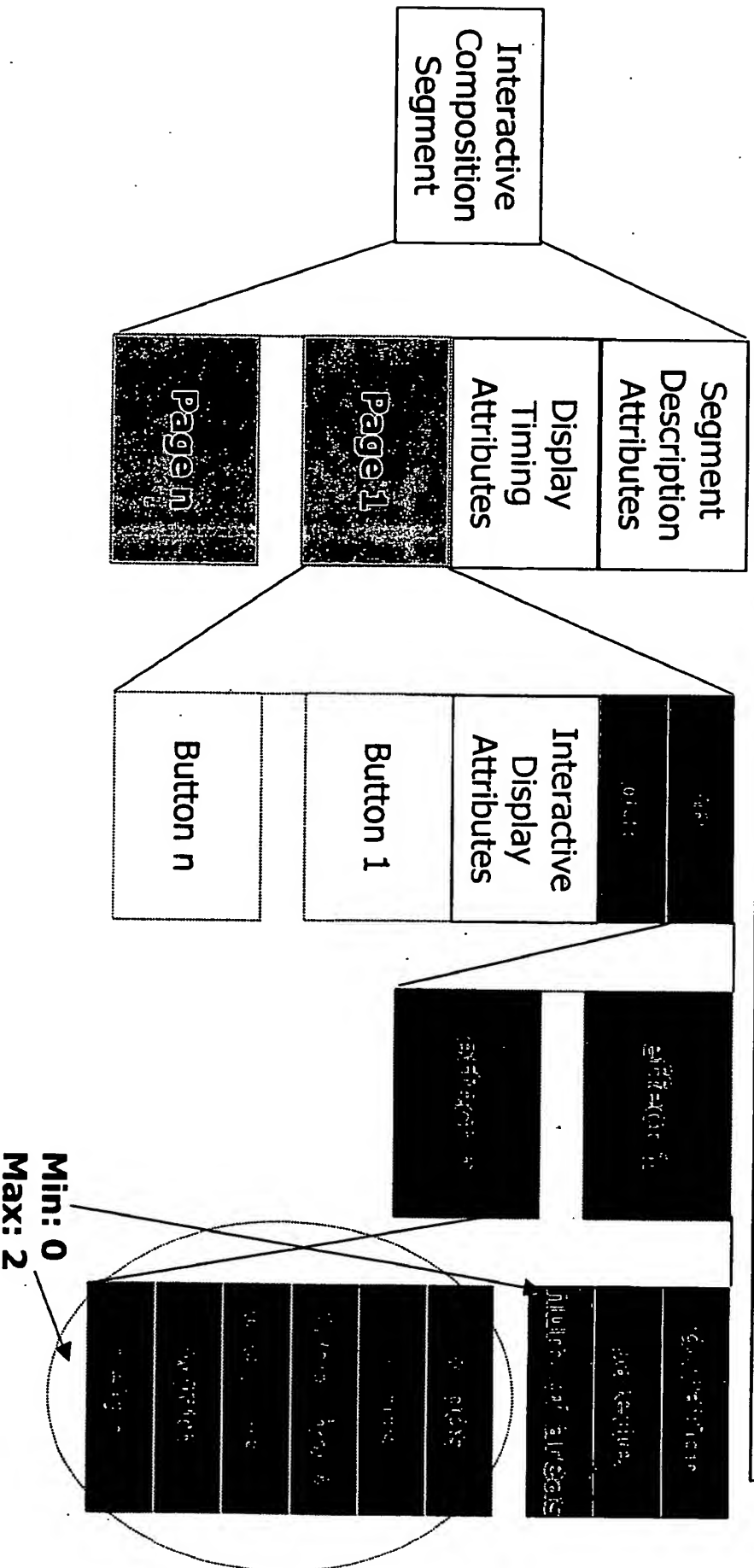
Animation Effects: Example 2

- ❑ Several animation effects may be identical. Support reuse of animation effects.



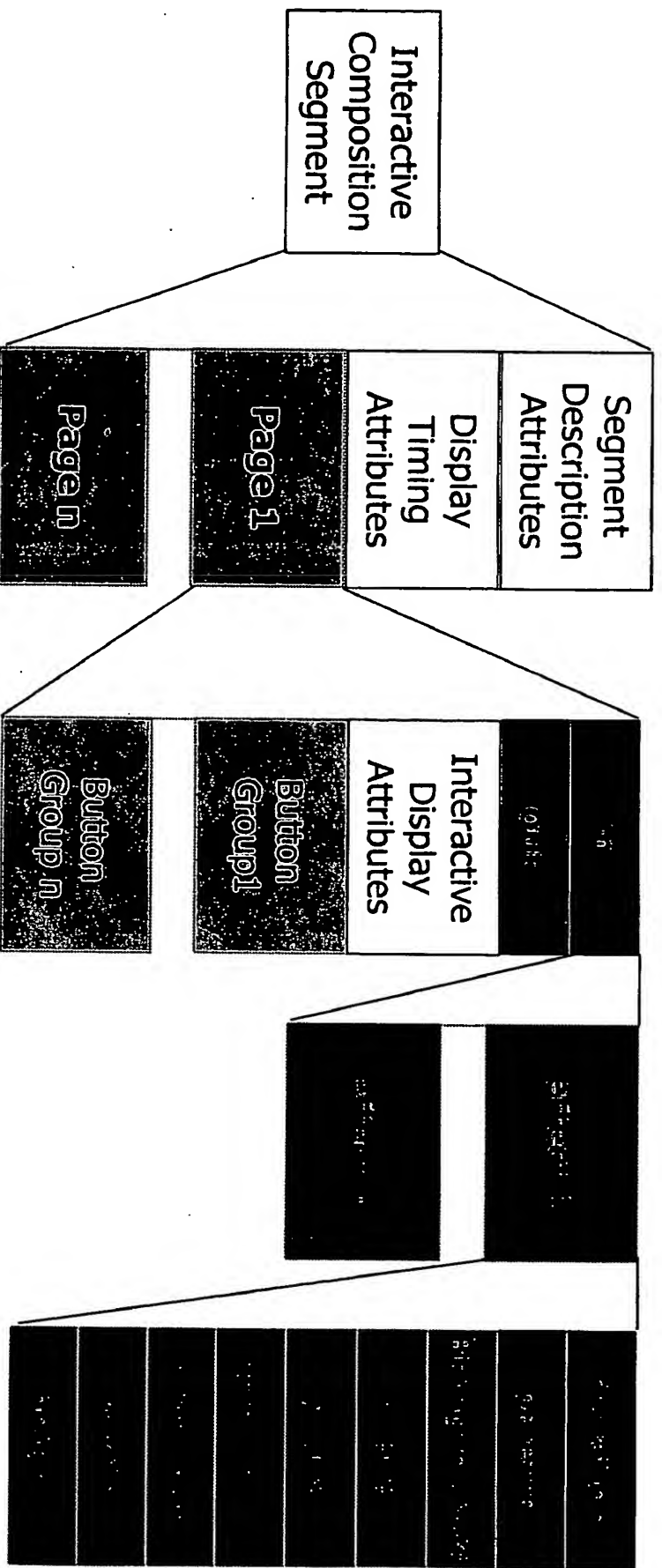
Animation Effects: Example 3

- ☐ Using Animation Effects example 1, extend to support additional fields for two cropping areas



Animation Effects: Example 4

- ☐ Extending Animation Effects example 1 and the Background Example 3, reference the Button Group for the cropping rectangle.
- ☐ This provides a flexible framework for different parts of the menu to be animated for introduction and removal.



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